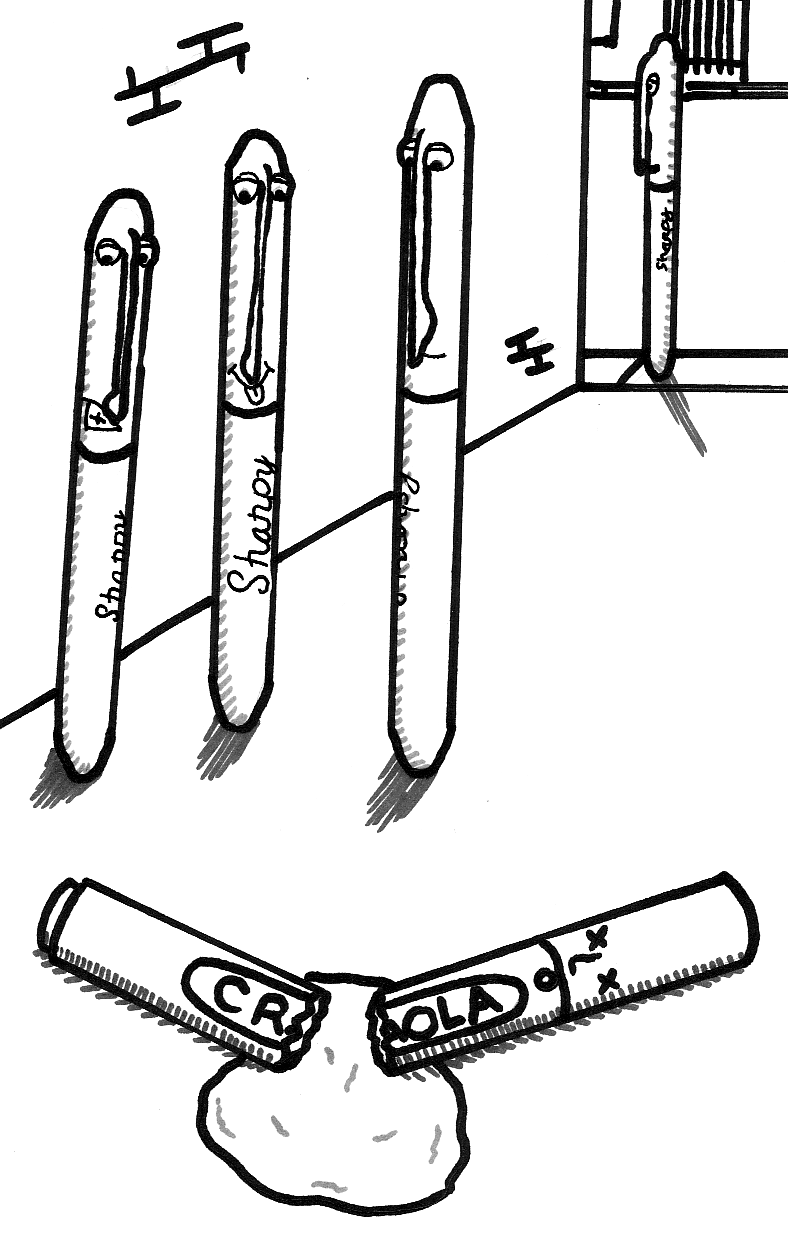
**Death of Crayola Lab**

Often DNA is used in court cases to prove if a person was at the crime scene or not. When presenting DNA as evidence, the expert shows a picture of the DNA after it has gone through chromatography to separate the different parts. If all the parts match exactly, then the suspect was definitely at the crime scene.

In this lab you will try to determine which suspects (Vis-A-Vis colors) were at the crime scene. As a class, you will determine the “DNA” of each color by paper chromatography and then you will match it to the crime scene evidence provided by your teacher.

**Equipment:**

250 mL Beaker

Chromatography Paper Strips

Pencil

Sharpie Colors

Dilute Ethanol

**Procedure:**

1. Obtain two strips of chromatography paper that are longer than the beaker is tall.

2. Using a PENCIL, LIGHTLY draw a line across the width of each strip that is 2 cm from one end of the strips. (use a ruler).

3. Place the strips with the pencil marked side down into the empty beaker. Fold the top of the paper over a pencil/pen so that the paper hangs down into the beaker, but does not touch the sides of the beaker (should be close to the bottom)

4. Remove the strips from the beaker. Get the 4 Vis-aVis markers. Make dots with these markers about 1 cm apart, *two colors only per strip*.

5. Pour some dilute ethyl alcohol into the beaker until you have a layer about 1 cm high. (70 ml approx)

6. Place the paper with the dots back into the beaker, and wait.

Pencil

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**.**

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**.**

Dots

Dilute Ethanol

7. When the dilute ethanol level has reached near the top of the paper, put out the paper and lay it on a paper towel to dry. Return the dilute ethanol to the bottle and rinse out return the beaker.

**Analysis:**

1. Measure the total distance from the pencil line that the dilute ethanol moved:

Strip 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm Strip 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm

2. For each color, measure how far the dot(s) moved from the line in cm.

|  |  |
| --- | --- |
| **Colors** | **Distance resulting dot(s) moved** |
|  |  |
|  |  |
|  |  |
|  |  |

3. Now find the Rf value of **EACH** dot by taking the distance from the table and divide it by the total distance from #1. Round each number to only 2 digits after the decimal.

|  |  |
| --- | --- |
| **Chosen Sharpie Colors** | **Rf for dot(s)** |
|  |  |
|  |  |
|  |  |
|  |  |

4. The RF value of the ink left at the scene was **.71**

5. Who killed the crayon??? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_